

**REMARKS**

The Office Action mailed on August 12, 2004, has been reviewed and the comments of the Patent and Trademark Office have been considered. Prior to this paper, claims 1, 2, 4 to 8, 10, 12 and 14 to 27 were pending. By this paper, Applicant does not cancel any claims, and adds claims 28-30. Therefore, claims 1, 2, 4 to 8, 10, 12 and 14 to 30 are now pending.

Applicant respectfully submits that the present application is in condition for allowance for the reasons that follow.

**Rejections Under 35 U.S.C. § 102**

Claims 20, 23 and 24 stand rejected under 35 U.S.C. §102(b) as being anticipated by Stark (United States Patent No. 4,373,330). In response, Applicants respectfully submit that the above claims are allowable for at least the reasons that follow.

Applicants rely on MPEP § 2131, entitled “Anticipation – Application of 35 U.S.C. 102(a), (b), and (e),” which states that a “claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” It is respectfully submitted that Stark does not describe each and every element of any of claims 20, 23 or 24.

Claim 20 recites a filter system comprising a valve unit configured to direct exhaust flow to a first fiber web filter when directing fuel to a second fiber web filter to have said second fiber web filter function as a second ***surface combustion burner membrane*** and configured to direct said exhaust flow to said second fiber web filter when directing fuel to said first fiber web filter to have said first fiber web filter function as a first ***surface combustion burner membrane***. (Emphasis added.) In an exemplary embodiment according to the invention of claim 20, after filtered particulate matter builds up, premixed diesel and air burns on the ***surface*** of a fiber web after ignition to burn away the particulate matter on the web. The flame that burns the particulate matter during this regeneration period is present on the ***surface*** of the web. (See, for example, Fig. 1, which presents filter 18 in a regeneration

mode, where fuel 52 is delivered down the respective pipe and exhaust port 49 is closed, thus forcing the fuel through the filter web 18 from the inside out (see arrows 54), where combustion takes place on the surface of the filter web 18, thus causing it to function as a surface combustion burner membrane.)

In contrast, the removal of particulate matter, such as carbon, from the filters of Stark is accomplished, with reference to Stark's Fig. 1, with a *separate* burner assembly 31 upstream from the filter 26a, fuel from which is ignited by igniter 32 (col. 6, lines 17-20) also upstream from the filter 26a to burn off the particulate matter that has built up on the filter 26a. Burner assembly 31 and igniter 32 function in an analogous manner as a flame thrower vis-à-vis the filter 26a. Indeed, the device of Stark basically corresponds to the prior art filter system discussed on page 1, lines 21-23 of the specification; a prior art device upon which Applicant's invention improves. The device of Stark clearly does not utilize surface combustion burner membranes. Therefore, claim 20 is allowable for at least this reason. Claims 23 and 24 are allowable at least due to their dependency from claim 20.

#### Claim Rejections Under 35 U.S.C. §103(a)

In the Office Action, Claims 1, 2, 4-7, 10, 12, 14-17, 21, 22 and 26 are rejected under 35 U.S.C. §103(a) as being unpatentable over Stark in view of Frankenberg (U.S. Patent No. 4,449,362). Further, claim 8 is rejected in view of these references when combined with Shinzawa (U.S. Patent No. 4,567,725), while claims 18 and 19 are rejected in view of the former combination in view of design choice. Claim 27 is rejected as obvious solely in view of Stark. Applicants respectfully traverse the rejection as to the claims above, and submit that these claims are allowable for at least the following reasons.

Applicants rely on MPEP § 2143, which states that:

[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a

reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

It is respectfully submitted that at least the first and third criteria of MPEP § 2143 have not been met in the Office Action.

The Cited References Do Not Suggest All Claim Recitations

Even if the first requirement of MPEP § 2143 was satisfied in the Office Action (which it is not, as explained below), the cited references still do not meet the third requirement, which is that “the prior art reference (or references when combined) must teach or suggest all the claim limitations.”

Independent claims 1 and 2 recite a method of regenerating a filter comprising the use of the filter as a “*surface* combustion burner membrane.” (Emphasis added.) As noted above in regard to the allowability of claim 20, Stark does not disclose a configuration where a filter is used as a surface combustion burner membrane during a regeneration period. Stark does not suggest such a feature either. Frankenberg does not remedy this deficiency of Stark. Applicant believes that Frankenberg functions in a similar manner (if not the same manner) as Stark when particulate matter built-up on filter 14 is removed during filter cleaning. Thus, neither reference teaches the above-identified missing recitation of claims 1 and 2. These claims and the claims that ultimately depend from these claims are thus not obvious in view of Stark even after combination with Frankenberg.

In regards to the rejection of claim 8, Applicant submits that the teachings of Shinzawa do not remedy the deficiencies of Stark and Frankenberg, even after combination, vis-à-vis use of a “surface combustion burner membrane.” In regards to the rejection of claims 18 and 19, Applicant submits that design choice does not remedy the above discussed deficiencies. In regards to the rejection of claim 27, Applicant submits that claim 27 is allowable for at least the reasons that make claim 20 allowable, as discussed above.

In sum, even if the first requirement of MPEP § 2143 is satisfied, the third requirement of MPEP § 2143 is not satisfied in the Office Action, since the cited references

do not teach each and every element of the present invention. Thus, the present claims are allowable.

Lack of Suggestion or Motivation to Modify or Combine the References

With respect to a suggestion or motivation to modify a reference, MPEP § 2143.01, subsection 6, states that “the proposed modification cannot change the principle of operation of a reference – If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810 (CCPA 1959).” In *Ratti*, the CCPA held that the “suggested combination of references would require a substantial reconstruction and redesign of the elements shown in the primary reference.” This substantial redesign would have resulted in changing a rigid seal to a resilient seal. Thus, a reference cannot be modified to render an invention obvious if the modification changes the principle of operation of the reference, **even if that modification is workable or easily implemented.**

With the above in mind, it is respectfully submitted that since Stark teaches as its principle of operation the flame thrower approach to burning off particulate matter on filters and fails to teach surface combustion during a regeneration period, substituting surface combustion for the arrangement of Stark would change the principle of operation of Stark. Since modifying Stark to utilize surface combustion changes the principle of operation of Stark, “the teachings of [Stark] are not sufficient to render the claims *prima facie* obvious.”

In summary, because of the lack of a proper suggestion or motivation in the prior art to modify the Stark reference, the first requirement of MPEP § 2143 has not been met and, hence, a *prima facie* case of obviousness has not been established, and therefore, the claims are allowable for this additional reason.

**Claim 25**

Although the Office Action Summary indicates that claim 25 is rejected, no reason is given for the rejection of claim 25. It is not identified under any of the 102 or 103 rejections. Applicants respectfully submit that if claim 25 is not allowed, any next office action rejecting claim 25 be a non-final office action, since that will be the first time that Applicant will be furnished with a reason why claim 25 is not allowable.

**New Claims**

Applicant has added new claims 28-30. These claims are allowable for at least the reason that they depend, respectively, from claims 20, 1 and 2, which, as detailed above, are allowable. These claims are further allowable for at least the reason that they recite recitations related to the direction of the exhaust flow during exhaust filtering and the direction of the fuel flow during regeneration. An exemplary embodiment of the invention of claims 28-30 may be seen in Fig. 1 of the specification, which shows exhaust gas traveling in one direction and fuel traveling in an opposite direction with respect to respective filters. As would be readily understood by the specification, these flow directions are reversed when the respective filters are switched to regeneration and filtering, respectively.

**Conclusion**

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

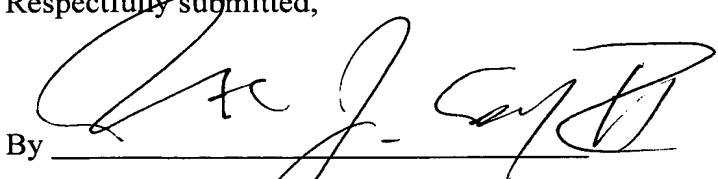
The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to

Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Examiner Tran is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

By



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